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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/524,640
Filing Date: May 30, 2006
Appellant(s): DATH ET AL.

Tenley R. Krueger
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 25, 2009 appealing from the Office action mailed March 4, 2009 (the Final Rejection).

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

U.S. Application Serial Number 10/569,240

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellants' statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellants' statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

U.S. 4,849,573	KAEDING	7-1989
EP 0921181	FINA	6-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 and 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,849,573 to Kaeding (hereinafter "Kaeding") in view of EP 0921181 (hereinafter "EP").

Kaeding discloses a process for converting a feed comprising alcohol (such as methanol), ether (such as dimethyl ether), and diluent steam to light olefins (ethylene, propylene, butene) over a zeolite catalyst such as ZSM-5 (MFI) and ZSM-11 (MEL). See col. 2, lines 43-52; col. 3, lines 4-23; and col. 6, lines 23-25. The zeolite catalyst has a silica to alumina mole ratio of at least 140, preferably 298 to 2000 (col. 3, lines 24-32). Natural zeolites may be converted to the desired type of zeolite catalyst by treatments including steaming and alumina extraction (col. 6, lines 17-19). The conversion process is conducted at a WHSV of 0.5 to 10, a pressure of 1 to 100 atmospheres (101-10,133 kPa), and a temperature of 350° to 600° C (col. 8, lines 24-44).

The difference between Kaeding and the claimed invention is that Kaeding discloses Si/Al mole ratio of at least 140 whereas the claimed invention calls for a ratio of 250 to 500 for a MFI catalyst and 150 to 800 for a MEL catalyst.

However, overlapping ranges are prima facie evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Kaeding's Si/Al mole ratio that corresponds to the claimed range. *In re Malagari*, 182 USPQ 549 (CCPA 1974).

Kaeding does not disclose the particulars of steaming and extracting aluminum from the catalyst by contacting the catalyst with a complexing agent to obtain a catalyst having the desired Si/Al ratio.

The EP reference is relied upon to show that a steam treatment of a catalyst reduces an amount of tetrahedral aluminum in the crystalline silicate framework by forming alumina. Following the extraction steam treatment, the extraction is performed to de-aluminate the catalyst by treating with a complexing agent (pages 6-7 [0043], [0051-0052]).

Therefore, it would have been obvious to one having ordinary skill in the art that the disclosure of Kaeding to steam and dealuminate zeolite catalysts to obtain catalysts having desired Si/Al mole ratio would have included the known step of dealuminating the catalyst by contacting with a complexing agent as evidenced by EP reference.

(10) Response to Argument

Appellants argue, "The references of record do not provide a motivation to replace the catalyst in *Kaeding* (for a methanol to propylene conversion process) with the catalyst of *Fina* (used for a C₄₊ olefin conversion process to propylene)." See page 4, 1st full paragraph of the Appeal Brief. The argument is not persuasive because firstly Kaeding discloses the claimed MFI (ZSM-5) and MEL (ZSM-11) catalysts and wherein the catalysts have silica to alumina mole ratios in the range of 298 to 2000 are particularly preferred (col. 3, lines 29-32). It is noted the disclosed silica to alumina mole ratios in Kaeding overlap with the claimed ratio of 250 to 500 for the MFI catalyst and 150 to 800 for the MEL catalyst. It has been held that overlapping ranges are prima

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facie evidence of obviousness. *In re Malagari*, 182 USPQ 549 (CCPA 1974). Thus, there is no need to replace the catalyst in Kaeding with the catalyst in Fina. Secondly, Fina was relied upon to show the particulars of claimed steaming and dealumination steps of the catalyst which was missing from Kaeding especially in light of Kaeding's specific disclosure, "Natural zeolites may be converted to the desired type of zeolite catalyst by treatments including steaming and alumina extraction." See column 6, lines 17-19. Notwithstanding that the Fina reference is directed to an olefin cracking process, it would have been obvious to one skilled in the art to have modified the process of Kaeding by treating zeolites by steaming and dealumination to obtain catalysts having desired silica to alumina mole ratio as evidenced by Fina. It is noted Fina has been relied upon solely to substantiate the details of making the catalysts to obtain catalysts having desired property, i.e., silica to alumina molar ratio, in the Kaeding process.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/In Suk Bullock/
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Conferees:

/Glenn A Caldarola/
Acting SPE of Art Unit 1797

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